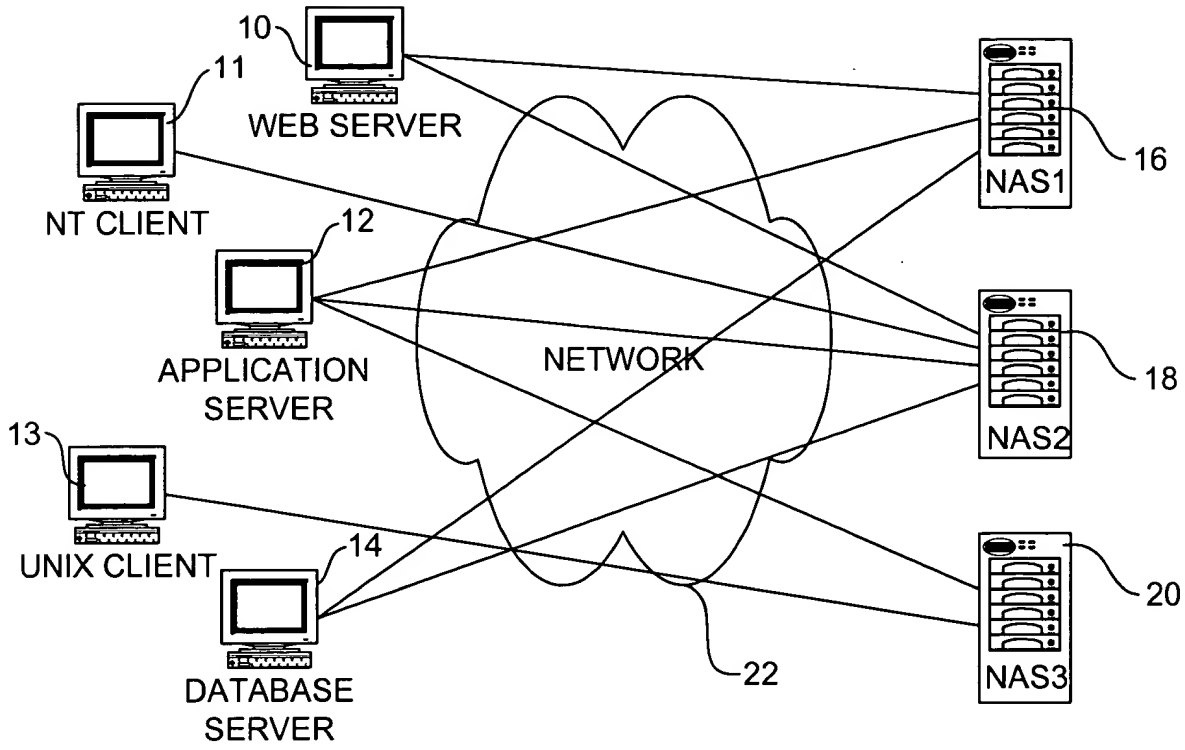


FIG. 1 (PRIOR ART)

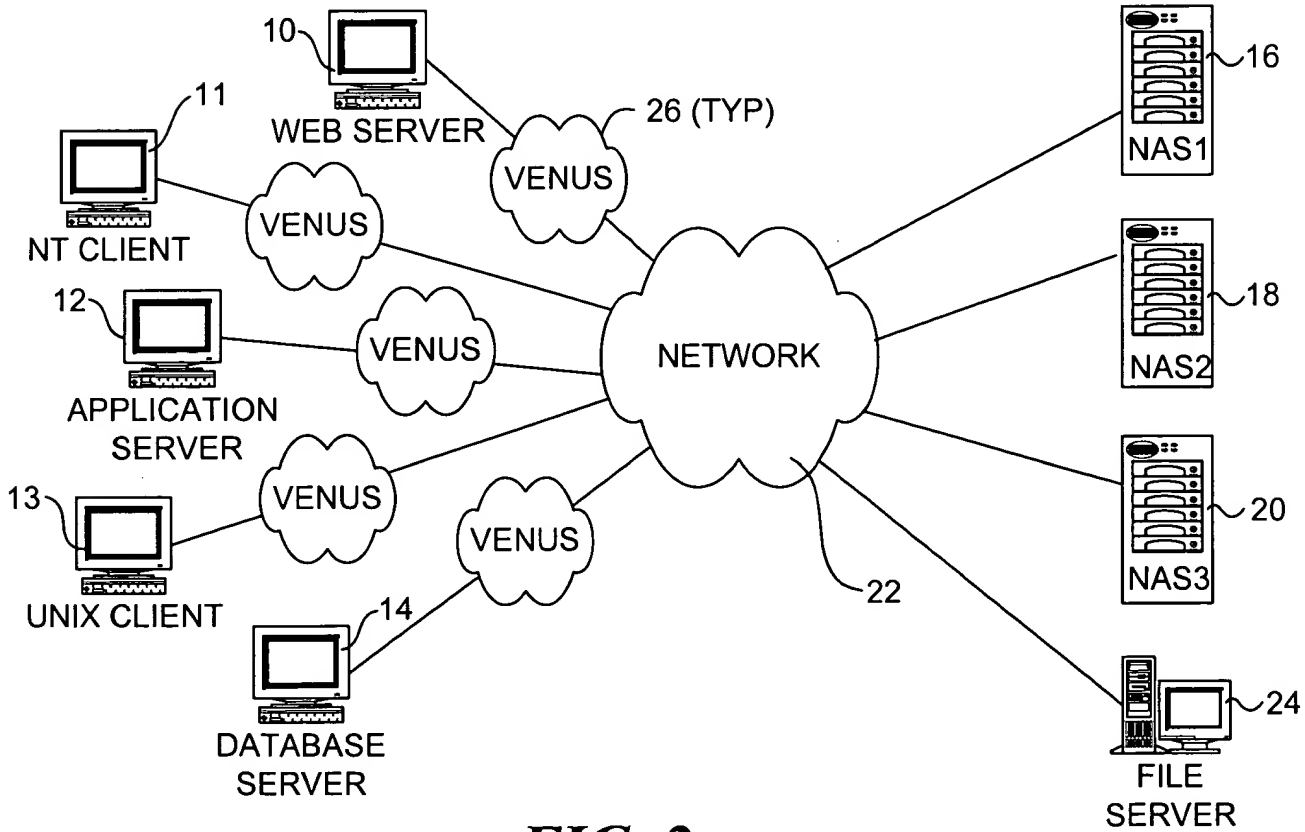


FIG. 2

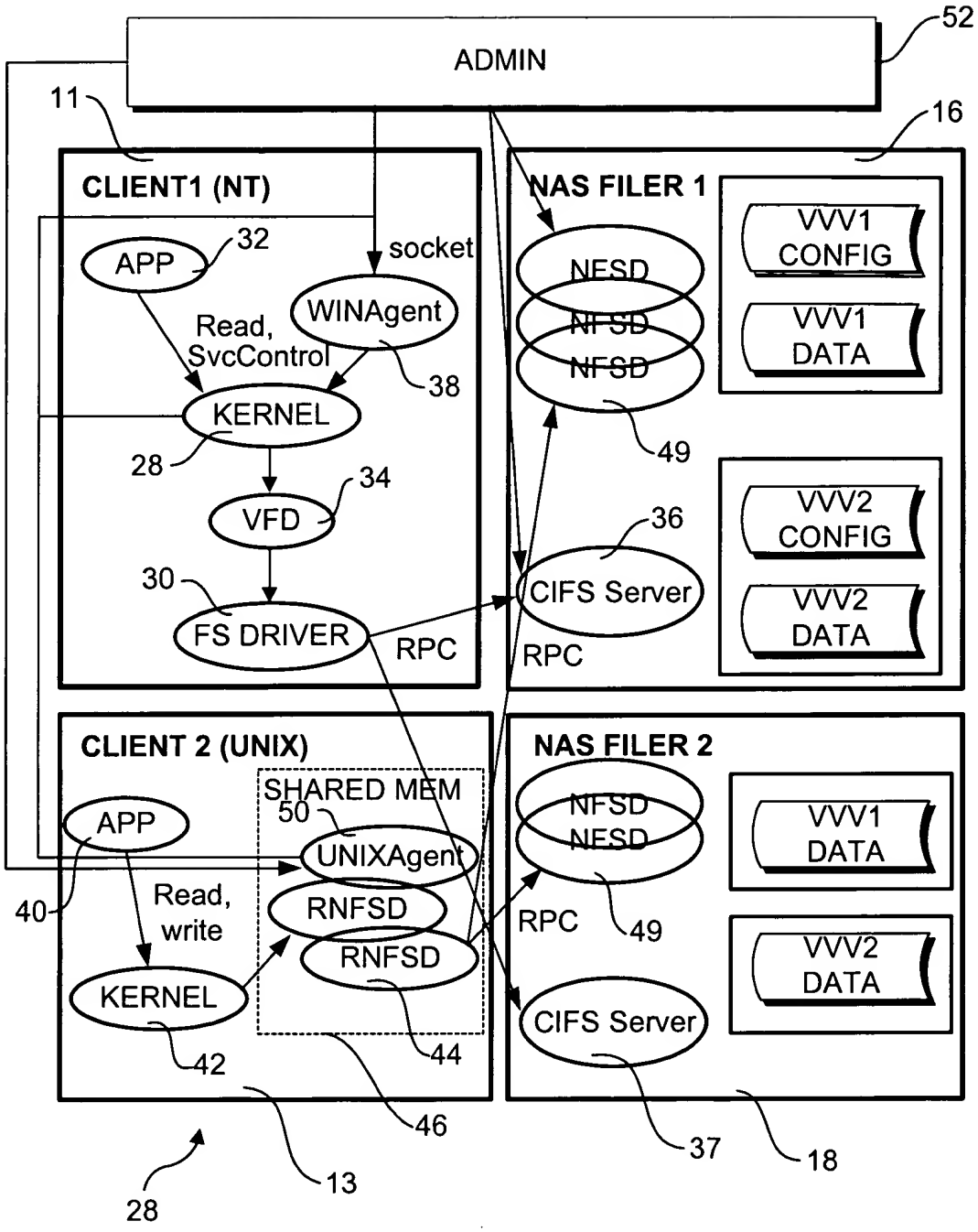

ADMIN
52
11
16
CLIENT1 (NT)
APP
32
socket
WINAgent
Read,
SvcControl
38
KERNEL
28
34
VFD
30
FS DRIVER
RPC
NAS FILER 1
NESD
NFSD
NFSD
49
VVV1
CONFIG
VVV1
DATA
36
CIFS Server
RPC
VVV2
CONFIG
VVV2
DATA
CLIENT 2 (UNIX)
SHARED MEM
50
APP
UNIXAgent
40
Read,
write
RNFSD
RNFSD
KERNEL
42
44
46
13
28
NAS FILER 2
NFSD
NESD
49
RPC
VVV1
DATA
VVV2
DATA
CIFS Server
37
18

FIG. 3

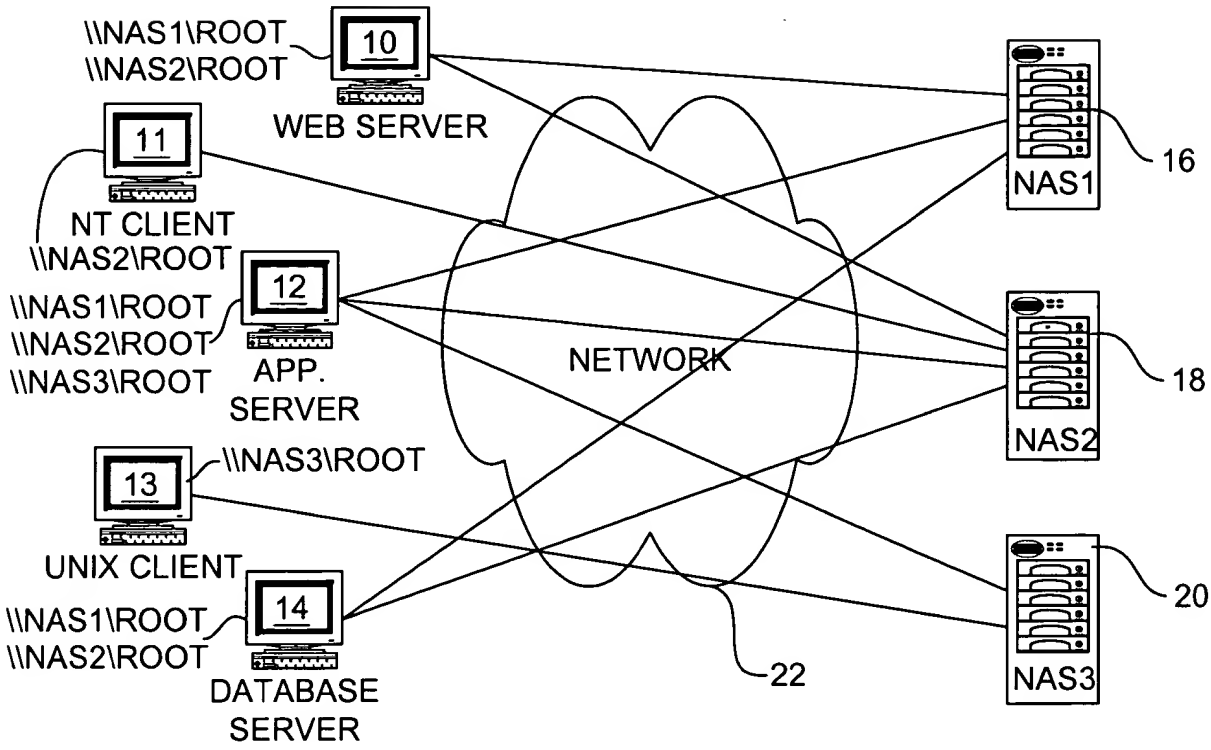


FIG. 4 (PRIOR ART)

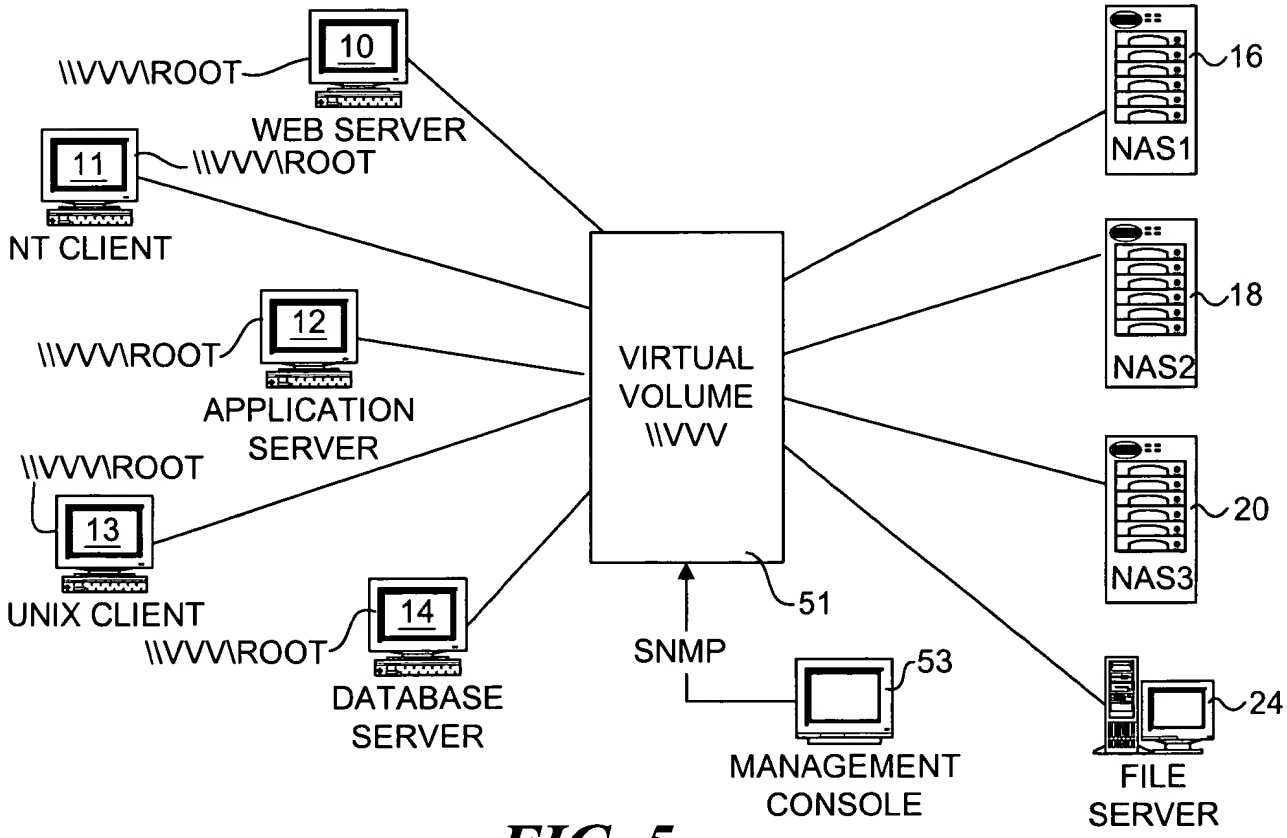


FIG. 5

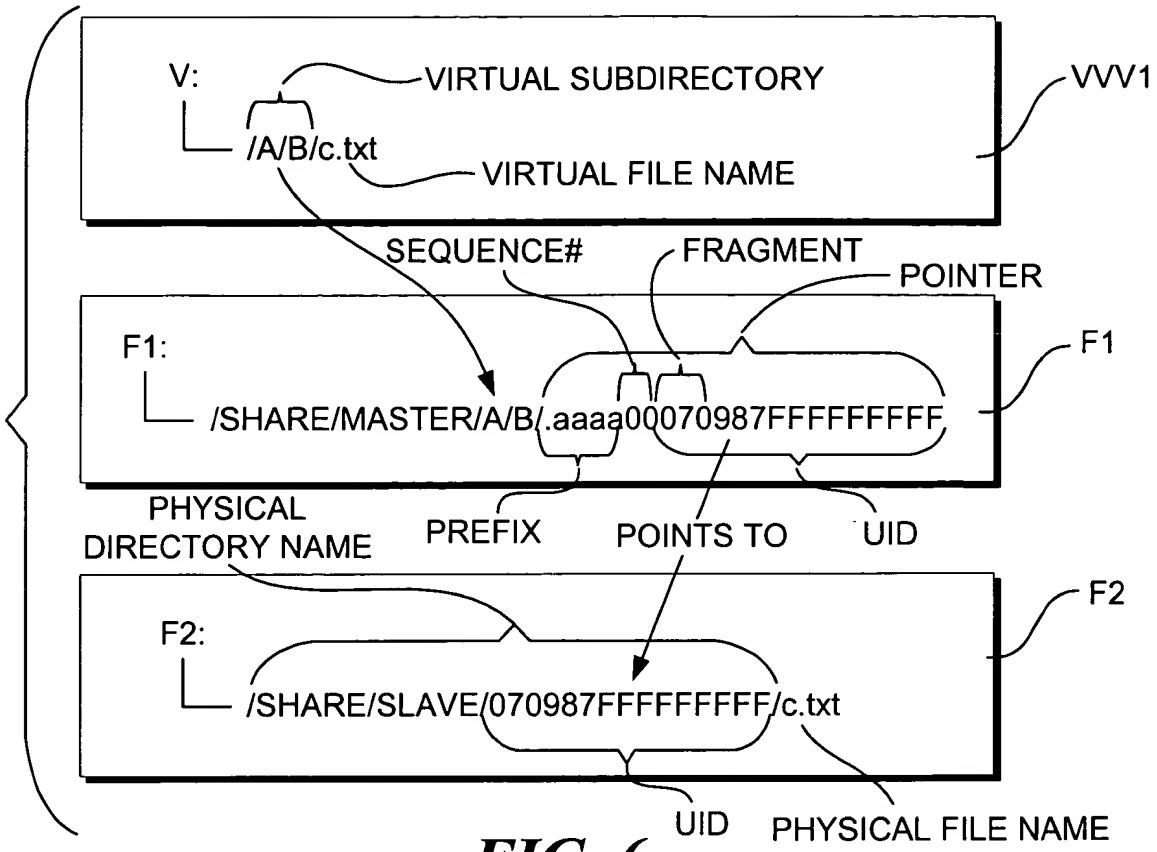

V:
VIRTUAL SUBDIRECTORY
/A/B/c.txt
VIRTUAL FILE NAME
VVV1
SEQUENCE#
FRAGMENT
POINTER
F1:
/SHARE/MASTER/A/B/.aaaa00070987FFFFFFFFF
F1
PHYSICAL
DIRECTORY NAME
PREFIX
POINTS TO
UID
F2:
/SHARE/SLAVE/070987FFFFFFFFF/c.txt
F2
UID
PHYSICAL FILE NAME

FIG. 6

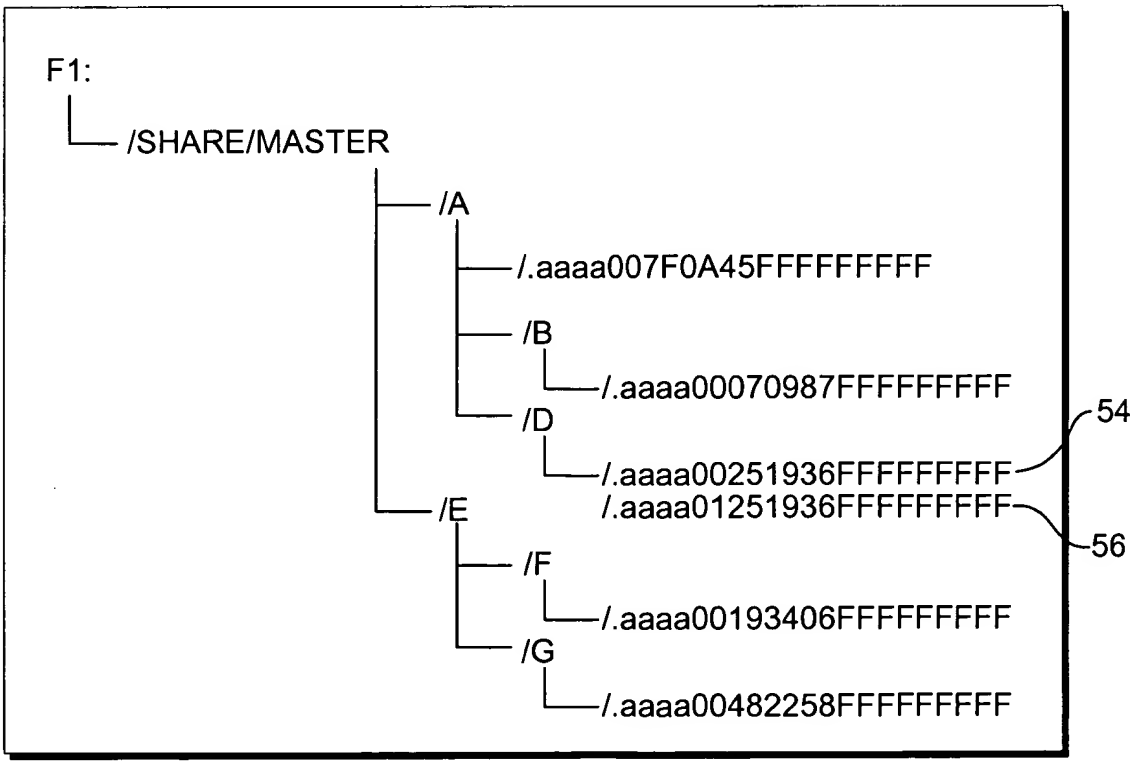

F1:
/SHARE/MASTER
/A
/.aaaa007F0A45FFFFFFFFF
/B
/.aaaa00070987FFFFFFFFF
/D
/.aaaa00251936FFFFFFFFF
54
/E
/.aaaa01251936FFFFFFFFF
56
/F
/.aaaa00193406FFFFFFFFF
/G
/.aaaa00482258FFFFFFFFF

FIG. 7

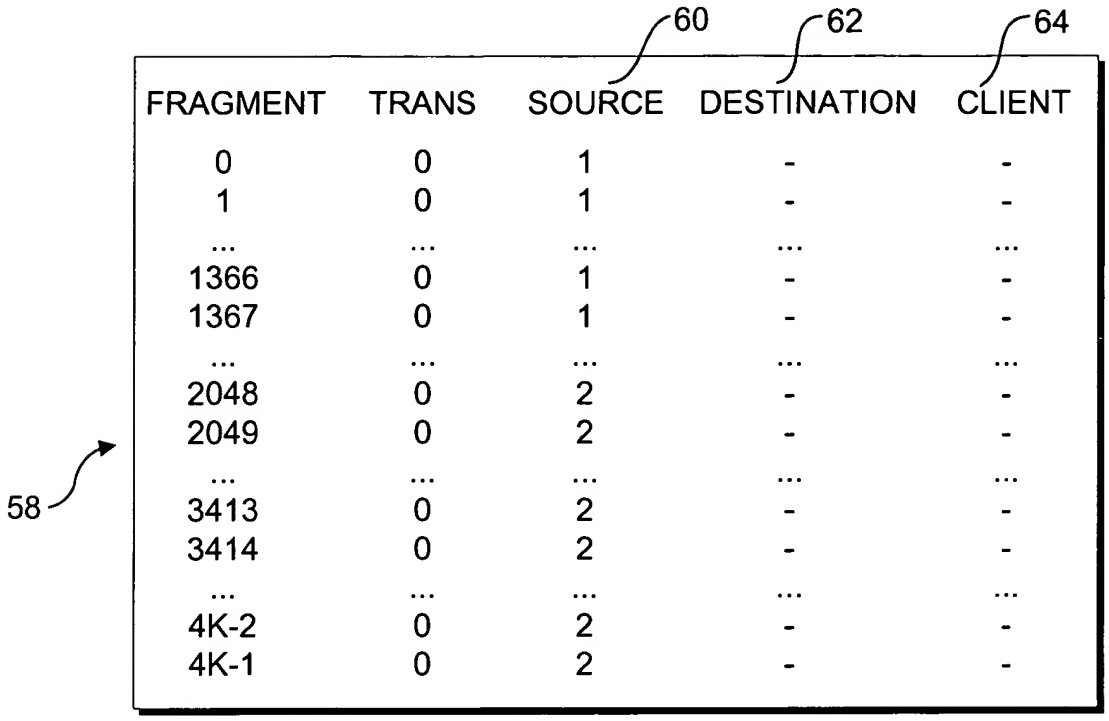

60
62
64
58
FRAGMENT TRANS SOURCE DESTINATION CLIENT
0 0 1 - -
1 0 1 - -
... ...
1366 0 1 - -
1367 0 1 - -
... ...
2048 0 2 - -
2049 0 2 - -
... ...
3413 0 2 - -
3414 0 2 - -
... ...
4K-2 0 2 - -
4K-1 0 2 - -

FIG. 8A

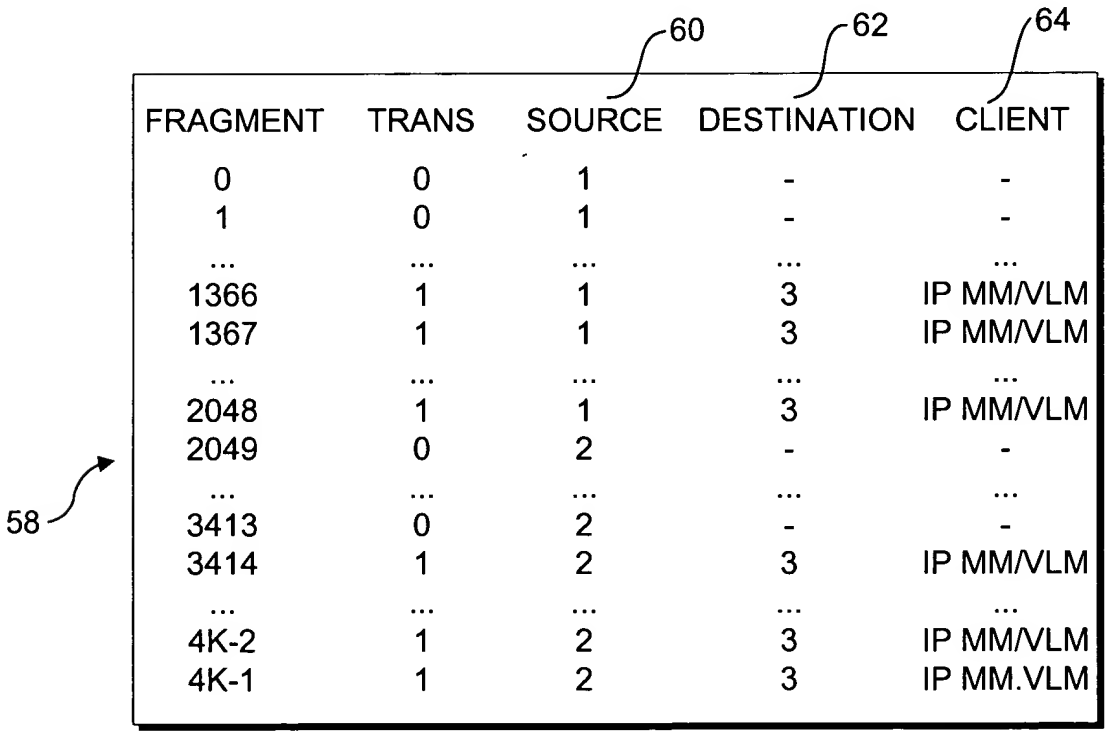

60
62
64
58
FRAGMENT TRANS SOURCE DESTINATION CLIENT
0 0 1 - -
1 0 1 - -
... ...
1366 1 1 3 IP MM/VLM
1367 1 1 3 IP MM/VLM
... ...
2048 1 1 3 IP MM/VLM
2049 0 2 - -
... ...
3413 0 2 - -
3414 1 2 3 IP MM/VLM
... ...
4K-2 1 2 3 IP MM/VLM
4K-1 1 2 3 IP MM.VLM

FIG. 8B

FRAGMENT	TRANS	SOURCE (60)	DESTINATION (62)	CLIENT (64)
0	0	1	-	-
1	0	1	-	-
...	...	...	...	...
1366	0	3	-	-
1367	0	3	-	-
...	...	...	...	...
2048	0	3	-	-
2049	0	2	-	-
...	...	...	...	...
3413	0	2	-	-
3414	0	3	-	-
...	...	...	...	...
4K-2	0	3	-	-
4K-1	0	3	-	-

58

FIG. 8C

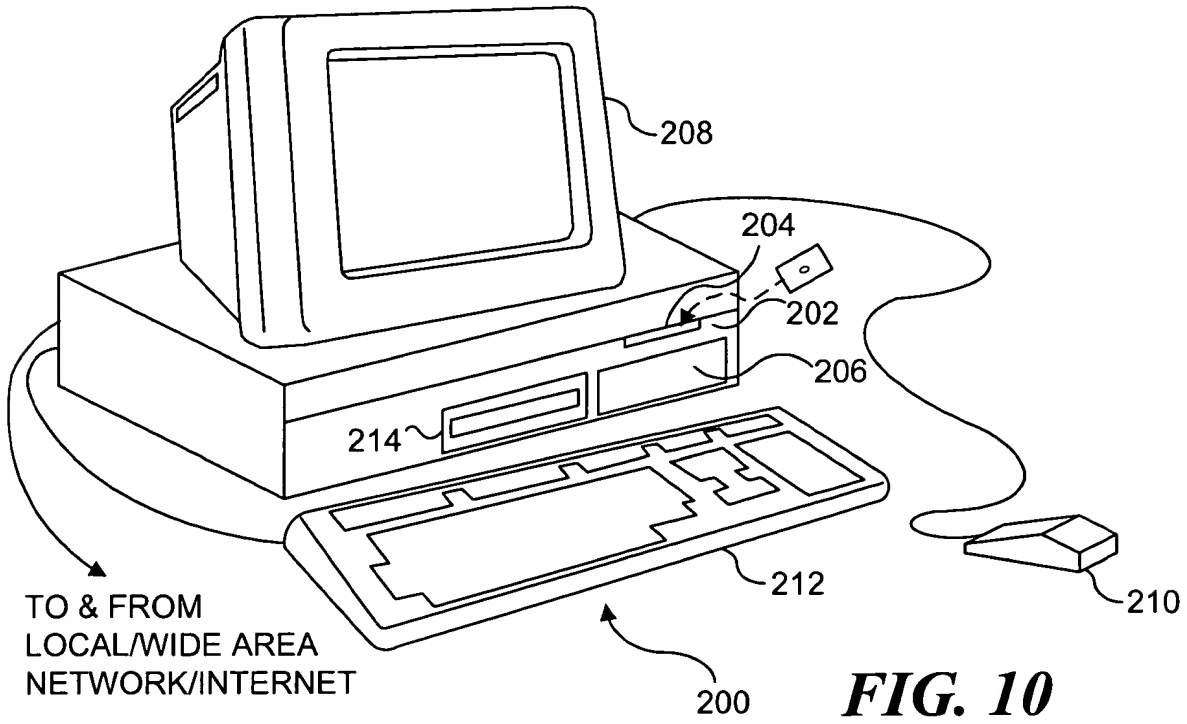
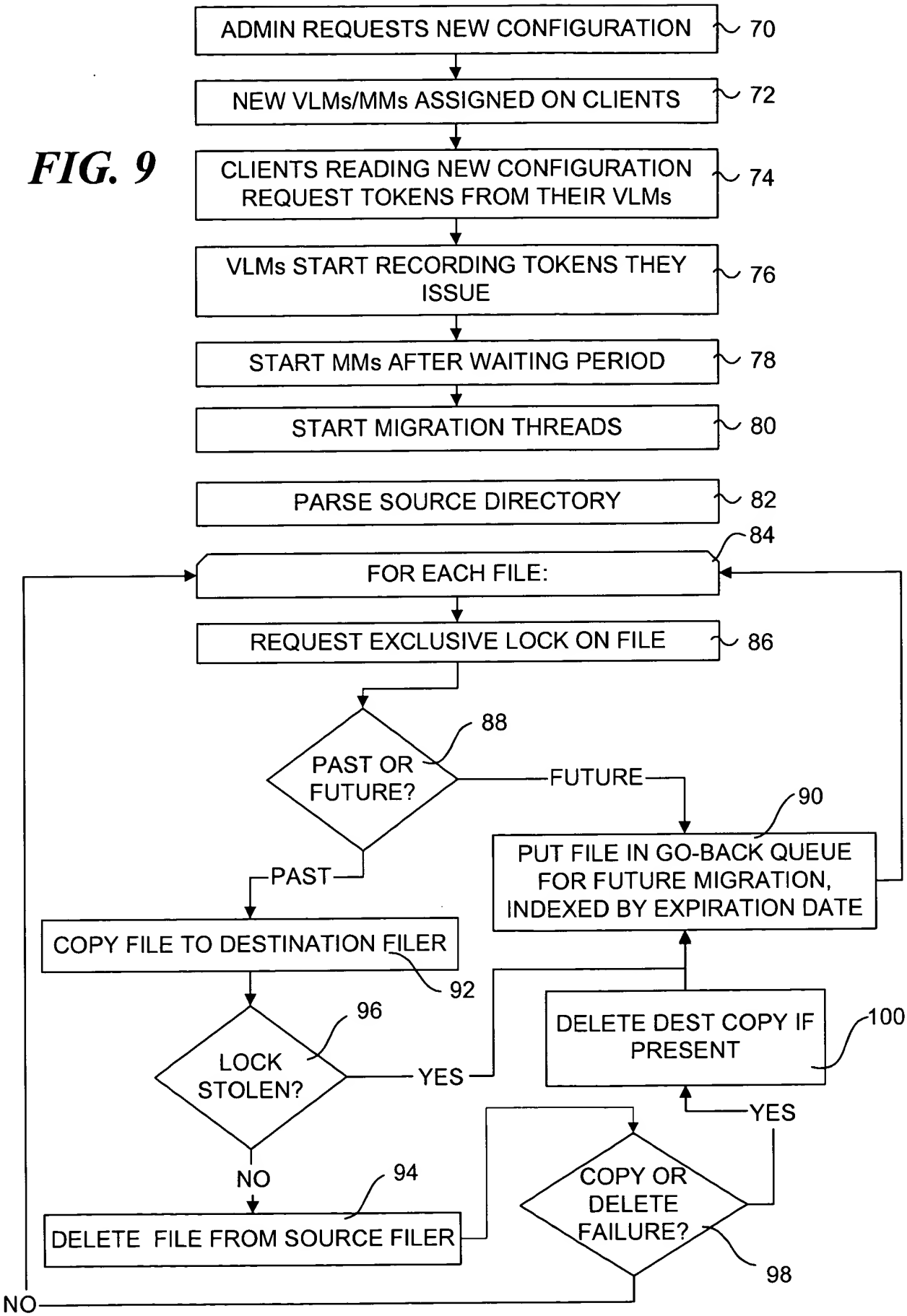


FIG. 10

FIG. 9


ADMIN REQUESTS NEW CONFIGURATION
70
NEW VLMs/MMs ASSIGNED ON CLIENTS
72
CLIENTS READING NEW CONFIGURATION REQUEST TOKENS FROM THEIR VLMs
74
VLMs START RECORDING TOKENS THEY ISSUE
76
START MMs AFTER WAITING PERIOD
78
START MIGRATION THREADS
80
PARSE SOURCE DIRECTORY
82
84
FOR EACH FILE:
REQUEST EXCLUSIVE LOCK ON FILE
86
88
PAST OR FUTURE?
FUTURE
90
PUT FILE IN GO-BACK QUEUE FOR FUTURE MIGRATION, INDEXED BY EXPIRATION DATE
PAST
COPY FILE TO DESTINATION FILER
92
96
LOCK STOLEN?
YES
DELETE DEST COPY IF PRESENT
100
YES
NO
94
DELETE FILE FROM SOURCE FILER
COPY OR DELETE FAILURE?
98
NO